A Quarterly Newsletter of

North Andover NASC Sustainability Committee

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Strange Bedfellows?

By Steve Daly

Uh-oh! My electric utility wants to work with me to reduce my energy usage. Huh? What's the catch? They sell electricity, right? They generate and transmit the power that travels through their grid and into my home. I pay them based on how much I use. Why on earth would they want me to use less rather than more?

And, yet, they keep sending me electricity-saving tips and advice. Change my light bulbs to CFLs; wash clothes in cold water; use a power strip on the computer and peripherals so they can all be turned off when not in use. They even offer me cash rebates when I turn in an old appliance like a second refrigerator. Why? Wasn't that old frost maker spinning my electric meter even faster and driving up my bill? Turn that baby in and they'll give me $50? What in the world is going on?

Here is National Grid's explanation: "We're committed to doing what's right for the planet. That's why we're asking customers to join us in reducing their energy consumption by participating in energy efficiency programs."

Well, maybe. If you are reading this publication, you probably do give two hoots about the environment and you are in favor of leaving it at least as healthy as you found it, if not better. But I'm not convinced that is the same motivation my electric company has for urging me to reduce usage by 3% per year. (Say, if we all do that, how soon before they are out of business?)

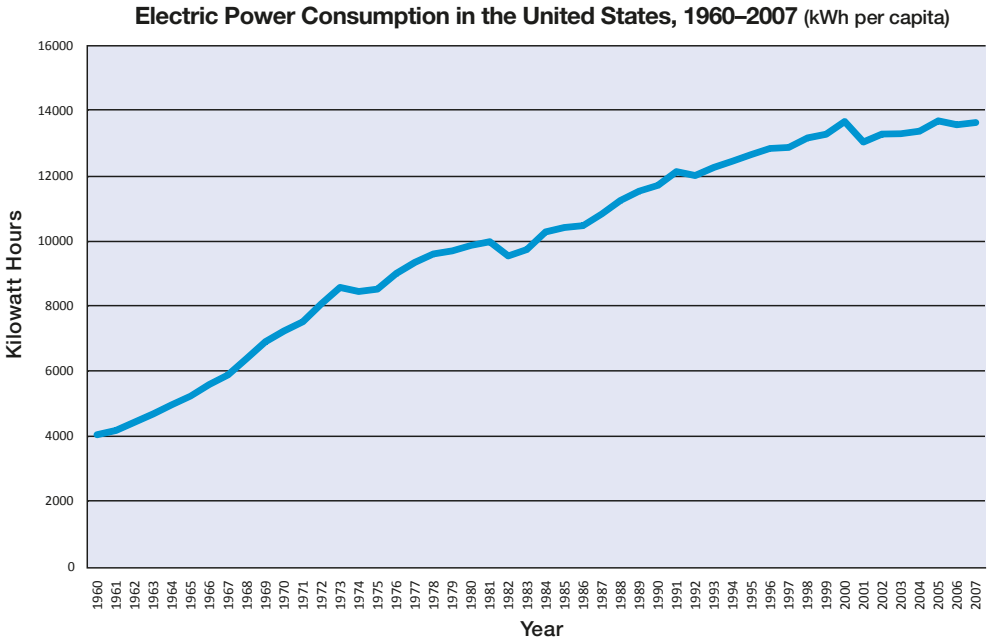
The fact is, that is not about to happen! Despite conservation efforts, the electric grid is under duress from an ever-growing demand. The grid cannot sustain the current level of growth, and the prospect of brownouts and blackouts is real. The cost of permitting and building new power plants is enormous, not to mention the issues regarding where to site these facilities. National Grid understands that there is greater benefit in encouraging conservation and reduction than in building new, expensive sources of electricity.

The most recent study of electricity consumption available for the U.S. shows that between 1997 and 2007, kilowatt hours (kWh) of electricity used per person in this country increased by 6% (World Bank, World Development Indicators). During that same period, the population of the U.S. increased by 10.5% (U.S. Census Bureau). Bottom line—more people using ever more electricity. That is the dilemma that has caused the electric utility to want to buddy up and help me lower my bill.

I'm game. Next issue, I'll tell you what we've done.

Steve Daly served on the North Andover Solid Waste/Sustainability Committee from 1998-2010 and learned enough during that tenure to get off his duff to make some changes.

Electric Power Consumption in the United States, 1960–2007 (kWh per capita)



Source: World Bank, World Development Indicators, International Energy Agency, Energy Statistics and Balances

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Tree-cycle!

After the holidays, "tree-cycle" your real Christmas tree. After you remove all of the lights, decorations, and tinsel from your family's cut holiday tree, give it another life with recycling. The tree must be loose—do not place the tree into an extra-large tree bag. Place the bare and unbagged tree at the curb. It will be picked up on your regular trash day between January 3 and January 14. Don't forget to remove the stand.

North Andover High School's Green Energy Project

The Town of North Andover, through the work of Community Development, the Sustainability Committee, School Department, and Public Works, received American Recovery and Reinvestment Act funding through the Massachusetts Department of Energy Resources (DOER) for a solar panel project on a North Andover High School building. This is a relatively small demonstration project that can be expanded in the future to provide green energy to the electric grid and provide some reduction in energy costs at the high school. For now it will be used by the school as a learning tool through an education module provided as part of the project.

(Continued on Page 4)

Tina Talks Trash!

Dear Tina: We got a new computer for Christmas. What should we do with the old one?

A: Does your old computer still work? If so, could someone else in your family use it? If it is working, don't just put it into a closet. A computer in working order is most useful when it is less than five to six years old. So, if it works and you no longer need it, pass it on, sell it, or give it away. Your old computer may be the "new" computer that another person needs!

If you can't find someone to take your old computer or if it doesn't work, DON'T throw it into the trash. Computer monitors and televisions are banned from disposal in incinerators and landfills in Massachusetts. There's a good reason for this ban. Electronics contain metals and chemicals that are safe during use. However, when electronics are mixed with household trash, compacted in garbage trucks, and sent to landfills, they are broken and crushed, releasing these metals and chemicals into the air and, potentially, into our water supplies.

When we recycle electronics, the metals, plastics, and chemicals are captured for reuse. Many of the raw materials for electronics are mined in far-flung countries. When we recycle electronics, we are "mining" for resources right here in the U.S. and helping to create jobs.

Your old computer can be recycled at the TBI Recycling Facility at 210 Holt Road. Or, you may call TBI at 978-686-8604 to schedule a pickup. There is a charge for computer monitor and TV recycling: $5 for screens 13" or less, and $15 for all larger screens.

Staples stores also offer electronics recycling. Dell brand office equipment is accepted for free, and all other brands of computer monitors, desktop and laptop computers, printers, scanners, all-in-one machines, and fax machines are accepted for a $10 fee. Free recycling service is available for mobile phones, PDAs, pagers, digital cameras, and chargers.

Tina

One Change

If you were going to make one change this month, what would it be? Here's an idea—replace a burned-out light bulb with a high-efficiency bulb. The most common energy-efficient bulbs are compact fluorescent lamps (CFLs). You might think of these as the "twisty" bulbs, although some of these now come with globe or torpedo enclosures. About one-quarter of all light bulbs purchased last year for residential use were CFLs. Another option is light emitting diodes (LEDs).

An average household spends about 11% of its electricity budget on lighting. The electricity cost to light a $1 incandescent bulb for six hours a day for one year is about $14. Before the end of the year, you'll need to replace the bulb. A $3 CFL will only need about $3.25 in electricity for a year—and the bulbs will last four times as long. Over four years, your cost per fixture for an incandescent bulb would be about $60. To use a CFL in that same fixture, your cost would only be $16. Plus, you would have used about 75% less electricity. Multiply that by all the lighting fixtures in your house, and you begin to see a big savings on your electricity bill and a reduction in your waste.

LEDs create even more energy savings and last much longer. An LED bulb would only need about $1.85 of electricity each year and would last for nearly 23 years! Unfortunately, the initial cost is much higher, with bulbs costing $20 to $40 each. However, the price of LEDs continues to come down.

Remember that CFLs contain a small amount of mercury. During use, this mercury is contained inside the bulb and poses no threat to your family. However, when the bulb burns out, you will need to recycle it. Some retailers accept old CFLs for recycling when you purchase new bulbs. You can also contact us for information on when and where to recycle your CFL bulbs.

For more information, go to www.energysavers.gov/tips/lighting.cfm, www.lamprecycle.org, or www.ewg.org/CFL-savings-calculator.

When you hear "rare earth," you might wonder if it is the name of a science fiction book, the title for a nature show, or perhaps a mistaken reference to "Middle Earth" from *The Lord of the Rings* Trilogy. Actually, it is none of the above. Rare earth elements are 17 metallic elements found in the earth's crust that are essential to electronics manufacturing. They aren't particularly rare, but they are often found in low concentrations, making extraction difficult or costly. China is the world's largest supplier of these rare earth elements, which are necessary in the manufacture of everything from batteries to cell phones and from computers to cars.

As more and more products require electronic components, sourcing rare earth elements becomes a larger concern worldwide. One ready source of rare earth elements can be found in our workplaces and homes—used and unneeded electronics. Recycling electronics of all types recovers rare earth elements, creating a domestic source that requires less energy to capture and use. Of course, recycling electronics also reclaims precious and other metals, chemicals, and plastics.

Contribute to "urban mining" in the United States by properly recycling unneeded electronics. Not sure how? Contact us!

Powders of six rare earth elements oxides. ***(Photograph by Peggy Greb, Agricultural Research Center of United States Department of Agriculture.)***

FAST FACTS

NASCAR chases recycling

During 2010, NASCAR's Sprint Cup series drew 3.6 million fans to racetracks across America. On average, those fans each drank three beverages from PET bottles and two from aluminum cans, for a total of 18 million beverage containers!

During the 2008 race season, NASCAR kicked off a beverage container recycling program, collecting over 15 tons of material. By 2009, recycling more than doubled, with 34 tons of beverage containers recycled. In 2010, an estimated 3 million containers were recycled, topping 50 tons.

Photo courtesy of Michigan International Speedway

According to the Aluminum Association, recycling just one aluminum can saves enough energy to power a television set for three hours—about the time it takes to watch a race from home. Wherever you are and whatever event you are enjoying, remember to recycle!

Don't Text and Drive

For every 6 seconds spent texting while driving, the driver's eyes are off the road an average of 4.6 seconds—that's 77% of the texting time spent *not* looking at the road, oncoming traffic, pedestrians, and stopped or slowed vehicles. According to the Federal Motor Carrier Safety Administration, people who text while they drive are 20 times more likely to be in an accident. Texting and driving can result in near-misses, accidents, and, even, tragedy.

For people who work on and near our streets and roads, texting by drivers can be particularly dangerous. Think about a trash or recycling truck. It goes slowly and stops frequently, and workers are often outside the vehicle and in the roadway to do their jobs. In 2009, Manny Mejia, who was only 19 years old and working for a Florida trash hauler, lost both legs after he was struck behind a garbage truck by a driver who was texting while driving.

The U.S. Department of Transportation now bans texting everywhere in the U.S. by interstate truckers and drivers of commercial vehicles. Many states have banned texting for drivers of passenger vehicles, as well. Wherever and whatever you are driving, please don't text and drive! That message can wait!

Play green

What if the milk jug you emptied today turned into a toy next month? It just might! Green Toys, a California company, uses recycled plastic from recovered milk jugs to create new toys, including trucks, blocks, stacking cups, dishes, sand toys, jump ropes, and more. The toys are made in the U.S. from milk jugs recycled nearby.

How did milk jugs become the raw material of choice? Green Toys co-founder Robert von Goeben explains, "A lot of companies start with style, for example, it's got to look like Sponge Bob Square Pants, and then determine the material. We go the other way around. We say, we want the greenest, safest material. Now, what toys can we make?"

The toys aren't the only things made from recyclables. The boxes are eco- and kid-friendly, too! The recycled corrugated boxes that hold the toys contain no plastic inserts or annoying twist ties. Plus, the box is 100% recyclable.

Green Toys has one product not made from milk jugs—a flying disc made from recycled grocery bags!

To learn more, visit www.greentoys.com.

Quotes Requoted

We go on multiplying our conveniences only to multiply our cares. We increase our possessions only to the enlargement of our anxieties.

Anna C. Brackett, 1836–1911
The Technique of Rest
American Educator

Giving it a college try

Colleges are competing for more than sports championships this year.

In the fall, ThinkGreenLiveClean.com held the first **Greenest Student College Challenge.** Students were asked to make a green resolution and then explain how they would accomplish it. The winner, Brennan Bird, a senior at the University of California–Davis, started a project that he called, "Operation Zero Waste 2010—Less We Can!" During 2010, he kept all of his non-biodegradable waste packaging in his dorm room. He composted food waste and paper products, but he washed and stored all other packaging material. He spent the year looking for ways to reuse or creatively repurpose his non-biodegradable packaging waste. He plans to load the material onto his bike in early 2011 and ride it around Davis to raise awareness about the amount of packaging waste brought home by one person each year. Read more about Brennan's project and those of the runners-up at www.ThinkGreenLiveClean.com.

During October, the U.S. Environmental Protection Agency's WasteWise program issued the **Game Day Challenge** to colleges and universities. The participating schools were asked to select a home football game during October, plan and implement a waste reduction program for that game day, and track their results, including the attendance, waste generated, and recyclables collected. Awards were given in five categories: Waste Generation, Diversion Rate (highest combined recycling and composting rate), Greenhouse Gas Reduction, Recycling Rate, and Organics Reduction Rate. The winners were Ithaca College, University of Tennessee at Martin, University of California–Davis, University of Central Oklahoma, and Marist College. Read more about it at www.epa.gov/wastes/partnerships/wastewise/challenge/gameday/.

In November, the Alliance to Save Energy sponsored the **Campus Conservation Nationals**, challenging college students to reduce energy and water use in their dorms. Because college students don't pay monthly utility bills for their dorm rooms, it is easy to forget the energy- and water-saving lessons they learned at home. During the three-week competition, 120,000 students at 40 colleges and universities competed to achieve the greatest resource reduction in their residence halls. The winners, DePauw University for electricity savings and Humboldt State University for water conservation, earned bragging rights and prizes. For details, visit http://CompeteToReduce.org.

Starting February 6 and running through April 2, 2011, college students face the biggest challenge of them all: **RecycleMania!** During this contest, more than five million students from 600 colleges and universities representing 49 states and the District of Columbia will compete to see who recycles the most on a per capita basis, who produces the least amount of waste, and who recycles the largest percentage of their overall waste stream. During last year's 10-week competition, students collected 84.5 million pounds of recyclable and compostable materials. Recycling and composting those materials saved an amount of energy equivalent to the annual electricity use of 15,140 homes and reduced greenhouse gas emissions by an amount equal to taking 23,850 cars off the road. Last's years winners were: California State University–San Marcos, United States Coast Guard Academy, North Lake College, Rutgers University, Franklin W. Olin College of Engineering, Kalamazoo College, Ursinus College, and Johnson & Wales University–Denver. To learn more about RecycleMania, visit www.RecycleMania.org.

Design for Recycling

The Institute of Scrap Recycling Industries (ISRI) is a trade association representing businesses that process, broker, and remanufacture recyclables. Every day, ISRI's 1,600 member businesses deal with recyclables. The more than 105,000 employees of these businesses know the challenges of sorting, disassembling, and remanufacturing. That's why ISRI promotes "Design for Recycling," a voluntary program that encourages product designers to consider end-of-life recycling at the earliest stages of the design process.

According to ISRI, Design for Recycling has two basic goals: "first, to eliminate or reduce the use of hazardous or toxic materials that may present a grave danger to the environment or put a recycler's workforce in jeopardy, and second, to discourage the use of materials that are not recyclable or manufacturing techniques that make a product non-recyclable using current technologies." In other words, make products safer and easier to recycle.

In order to promote the Design for Recycling program, ISRI recognizes businesses which are designing with recycling in mind and organizations that support them. In 2007, the U.S. Environmental Protection Agency was honored for fostering innovative design partnerships. In 2008, Hewlett-Packard was recognized for building computers and printers for easy disassembly and recycling, as well as reducing the use of hazardous substances. In 2009, Herman Miller received the award for eliminating waste during manufacturing and selecting product components that are easily recyclable. In 2010, Coca-Cola was recognized for creating "The PlantBottle," a fully recyclable PET bottle in which up to 30% of the petroleum has been replaced by plant-based materials, such as sugar cane and molasses.

Learn more at www.isri.org.

Reasons to go rechargeable

You head to the store because you need batteries. Do you grab the disposable alkaline batteries, knowing that you're going to have to replace dead batteries again in a few months? Or, do you buy the rechargeables, figuring it is better to buy batteries that will last you hundreds of charges?

High-tech gadgets and game controllers tend to use a lot of power when they are in use, meaning they drain battery power quickly. For these devices, rechargeables are definitely the way to go. The batteries will cost slightly more up front and you'll have the one-time cost of a charger, but you'll save money and trips to the store for regular replacements.

Rechargeable batteries come in all shapes and sizes, from laptop and cell phone batteries to standard AAA, AA, C, D, and 9-volt batteries that you use in remote controls, flashlights, and clock radios. Nickel-Metal Hydride (NiMH) rechargeable batteries work well in high-drain devices, like game controllers and high-tech gadgets, as well as low-drain devices, such as remote controls and flashlights. NiMH batteries hold their charge well when not in use, so they are the perfect rechargeable for multi-purpose use. The other type of rechargeable that can replace alkaline batteries is Nickel-Cadmium (Ni-Cd). These batteries do not hold their charge as well over the long term, so they work better in high-drain than low-drain devices. Whichever type you choose, be sure to pick the charger designed for the battery type you select.

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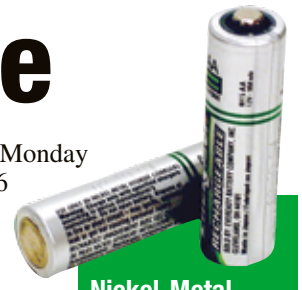
Did you know that small children sometimes swallow button cell batteries and die as a result? If you have expired or spent button cell batteries, put them in a safe place and then recycle them as soon as possible!

Even rechargeable batteries eventually wear out. When rechargeables will no longer accept or hold a charge, they are "spent" (although you might just refer to them as "dead"). Spent rechargeables, lithium batteries, and button cell batteries should never be mixed with household trash. These batteries are accepted at the TBI Recycling Facility at 210 Holt Road. Hours of operation are Monday through Friday, 6 a.m. to 6 p.m., and Saturday, 8 a.m. to 2 p.m. (closed Sunday).



Nickel-Metal Hydride (NiMH) batteries are a good choice for rechargeable household batteries.

Single-use household batteries that are labeled as "alkaline" batteries do not contain hazardous materials. You can put them into your trash or drop them off at the TBI Recycling Facility.

Did you know?

Americans purchase nearly 3 billion dry-cell batteries every year to power radios, toys, cellular phones, watches, laptop computers, and portable power tools.

Source: U.S. Environmental Protection Agency

Paperless? Not anytime soon!

A couple of decades ago, Americans were assured that computers would usher in a paperless society. Although computers and other electronic devices have certainly replaced some paper, our use of paper has continued to grow, with over 78.9 million tons of paper and cardboard generated in 2009. The good news is that our paper recycling rate hit an all-time high in the United States. Although total use of paper was down because of the recession, the recycling rate increased to 63.4% of all paper and cardboard used. As has been the case for several years, newspaper, corrugated cardboard, and office papers were recovered at the highest rates, with mixed paper, including unwanted mail, magazines, and catalogs, trailing behind.

Making paper requires a lot of water and a great deal of energy. Using recovered paper reduces both water and energy needs, but it doesn't eliminate them. While going paperless isn't possible yet, you can take steps to reduce the amount of paper that you use. Here are a few simple ideas:

- Don't print email messages or web pages. Instead, read them on-screen. If you'll need them again, put the emails into a folder and bookmark the websites.
- Make double-sided copies whenever possible.
- Pay your bills online instead of using paper checks and envelopes. Consider having your bills emailed to you, saving paper on that end, too.
- Use the back side of junk mail as note paper.
- Choose recycled-content paper. Don't just assume that all printer and copier paper is recycled content, because it isn't. Look for "post-consumer recycled-content paper." When you purchase it, you help create markets for recyclable paper.

You can recycle a wide range of paper products, including office and school papers, newspaper and inserts, corrugated cardboard, boxboard, junk mail, magazines, catalogs, and phone books. You can recycle paper at the curb. You may place mixed paper into paper bags, tie it into bundles no larger than 18" by 18" by 6", or put it into a lidded recycling container. Paper products can also be dropped off at the TBI Recycling Facility, 210 Holt Road. Drop-off hours are Monday through Friday, 6 a.m. to 6 p.m., and Saturday, 8 a.m. to 2 p.m. (closed Sunday).

Learn more about paper recycling at www.massrecyclespaper.org/.

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Recycling 1 ton of paper:

Saves enough energy to power the average American home for six months.
Saves the energy equivalent of 185 gallons of gasoline.
Saves 7,000 gallons of water.
Saves 3.3 cubic yards of landfill space.
Reduces greenhouse gas emissions by 1 metric ton of carbon equivalent (MTCE).

Sources: Municipal Solid Waste in the United States; AbitibiBowater Paper Retriever; Energy Information Administration; U.S. EPA Waste Reduction Model (WARM)

WHAT'S UP?

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Used motor oil never wears out; it just gets dirty. It can be recycled, cleaned, and used again. Motor oil poured onto the ground or tossed into trash cans (even in a sealed container) can contaminate and pollute the soil, groundwater, streams, rivers, and our ocean. When you recycle your used oil, you are protecting the environment and conserving a valuable resource.

Used motor oil is accepted for recycling at the Department of Public Works, 384 Osgood Street, on the first and third Saturday of each month, from 9 a.m. until noon. There is a charge of $0.50 per gallon.

Retail stores that sell motor oil are required to take back used motor oil if you have the receipt from the original oil purchase. The law provides for a limit of 2 gallons per person per day. With questions, call the Used Oil Hotline at 617-556-1022.

Green Energy

(Continued from Page 1)

In addition, a monitor will be installed in a public area of the building showing real-time power produced from the panels.

The work was competitively bid, and a North Andover company, NEXAMP, was the low bidder at $103,000. The work was completely funded by the grant. The project was built this past fall, and, once all of the approvals through National Grid and the DOER were received, the system became operational. Eighty-four photovoltaic modules, or solar panels, are located on the Art Building roof. Using the latest technology, no penetrations were made in the roof, preventing roof damage. A unit known as an inverter will convert the sun's energy to electrical power. The system is capable of producing approximately 18 kilowatts of electricity.

The companies that installed the system and manufactured the electrical components are owned and operated by North Andover residents.

We want your suggestions, questions and comments!

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